

# Exhibit F



UNITED STATES  
PATENT AND TRADEMARK OFFICE

# Assignment abstract of title for Application 14685511

| Invention title/Inventor  | Patent                  | Publication                | Application              | PCT | International registration |
|---|-------------------------|----------------------------|--------------------------|-----|----------------------------|
| WIRELESS END-USER<br>DEVICE WITH<br>DIFFERENTIAL<br>TRAFFIC CONTROL<br>POLICY LIST HAVING<br>LIMITED USER<br>CONTROL<br>Gregory G. Raleigh,<br>Alireza Raissinia,<br>James Lavine | 9215613<br>Dec 15, 2015 | 20150223100<br>Aug 6, 2015 | 14685511<br>Apr 13, 2015 |     |                            |

## Assignments (2 total)

| Assignment 2   |                |                                 |            |       |
|--|----------------|---------------------------------|------------|-------|
| Reel/frame   | Execution date | Date recorded                   | Properties | Pages |
| 041248/0777  | Dec 29, 2016   | Jan 4, 2017                     | 56         | 6     |
| Conveyance   |                |                                 |            |       |
| MERGER AND CHANGE OF NAME (SEE DOCUMENT FOR DETAILS).        |                |                                 |            |       |
| Assignors  |                | Correspondent                   |            |       |
| HEADWATER PARTNERS I LLC                                     |                | ANN TAYLOR                      |            |       |
| HEADWATER MANAGEMENT LLC                                     |                | 1011 PRUITT PLACE               |            |       |
|  |                | TYLER, TX 75703                 |            |       |
| Assignee   |                |                                 |            |       |
| HEADWATER RESEARCH LLC                                       |                |                                 |            |       |
| 1011 PRUITT PLACE  |                |                                 |            |       |
| TYLER, TEXAS 75703   |                |                                 |            |       |
| Assignment 1   |                |                                 |            |       |
| Reel/frame   | Execution date | Date recorded                   | Properties | Pages |
| 035403/0490  | Aug 16, 2011   | Apr 14, 2015                    | 1          | 3     |
| Conveyance   |                |                                 |            |       |
| ASSIGNMENT OF ASSIGNORS INTEREST (SEE DOCUMENT FOR DETAILS). |                |                                 |            |       |
| Assignors  |                | Correspondent                   |            |       |
| RALEIGH, GREGORY G.  |                | ANN TAYLOR                      |            |       |
| RAISSINIA, ALIREZA   |                | 555 TWIN DOLPHIN DR., SUITE 310 |            |       |
| LAVINE, JAMES  |                | REDWOOD SHORES, CA 94065        |            |       |
| Assignee   |                |                                 |            |       |
| HEADWATER PARTNERS I LLC                                     |                |                                 |            |       |
| 555 TWIN DOLPHIN DR., SUITE 310                              |                |                                 |            |       |
| REDWOOD SHORES, CALIFORNIA 94065                             |                |                                 |            |       |

## PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1  
 Stylesheet Version v1.2

EPAS ID: PAT3309404

|   |                                  |
|---|----------------------------------|
| <b>SUBMISSION TYPE:</b>   | NEW ASSIGNMENT                   |
| <b>NATURE OF CONVEYANCE:</b>  | ASSIGNMENT                       |
| <b>CONVEYING PARTY DATA</b>   |                                  |
| <b>Name</b>   | <b>Execution Date</b>            |
| GREGORY G. RALEIGH  | 08/16/2011                       |
| ALIREZA RAISSINIA   | 08/16/2011                       |
| JAMES LAVINE  | 08/16/2011                       |
| <b>RECEIVING PARTY DATA</b>   |                                  |
| <b>Name:</b>  | HEADWATER PARTNERS I LLC         |
| <b>Street Address:</b>  | 555 TWIN DOLPHIN DR., SUITE 310  |
| <b>City:</b>  | REDWOOD SHORES                   |
| <b>State/Country:</b>   | CALIFORNIA                       |
| <b>Postal Code:</b>   | 94065                            |
| <b>PROPERTY NUMBERS Total: 1</b>  |                                  |
| <b>Property Type</b>  | <b>Number</b>                    |
| Application Number:   | 14685511                         |
| <b>CORRESPONDENCE DATA</b>  |                                  |
| <b>Fax Number:</b>  |                                  |
| <i>Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent using a fax number, if provided; if that is unsuccessful, it will be sent via US Mail.</i> |                                  |
| <b>Phone:</b>   | 650-517-2791                     |
| <b>Email:</b>   | ann.taylor@headwaterllc.com      |
| <b>Correspondent Name:</b>  | ANN TAYLOR                       |
| <b>Address Line 1:</b>  | 555 TWIN DOLPHIN DR., SUITE 310  |
| <b>Address Line 4:</b>  | REDWOOD SHORES, CALIFORNIA 94065 |
| <b>ATTORNEY DOCKET NUMBER:</b>  | RALEP032C1C9                     |
| <b>NAME OF SUBMITTER:</b>   | ANN TAYLOR                       |
| <b>SIGNATURE:</b>   | /Ann Taylor/                     |
| <b>DATE SIGNED:</b>   | 04/14/2015                       |
| <b>Total Attachments: 2</b>   |                                  |
| source=RALE032C1C9_Assignment#page1.tif   |                                  |
| source=RALE032C1C9_Assignment#page2.tif   |                                  |

Attorney Docket No. 26WV-160509 [RALEP032]

### ASSIGNMENT

(1-8) *Insert Name(s) of Inventor(s)* (1) Gregory G. Raleigh (2) Alireza Raissinia  
(3) James Lavine

For good and valuable consideration receipt of which is hereby acknowledged, the undersigned agree(s) to assign, and hereby do(es) assign, transfer and set over to:

(9) *Insert name of Assignee* (9) Headwater Partners I, LLC

(10) *Insert state of incorporation of Assignee* (10) State of Delaware

(11) *Insert address of Assignee* (11) of 350 Marine Parkway, Suite 300, Redwood City, California, 94065, U.S.A.

(hereinafter designated as the Assignee) the entire worldwide right, title, interest, and patent applications and patents for every country, including divisions, reissues, continuations and all other extensions, rights and priorities in the invention known as and subject matter contained in

(12) *Insert Identification of Invention, such as Title, Case Number or Foreign Application Number* (12) Device-Assisted Services for Protecting Network Capacity (Case No. 26WV-160509 [RALEP032], Serial No. 13/134,028) for which the undersigned have filed an application for patent in United States of America

(13) *Insert Date of Filing of Application* (13) on May 25, 2011

1) The undersigned agree(s) to execute all papers necessary in connection with the application and any continuing or division applications thereof and also to execute separate assignments in connection with such applications as the Assignee may deem necessary or expedient.

2) The undersigned agree(s) to execute all papers necessary in connection with any interference which may be declared concerning this application or continuation or division thereof and to cooperate with the Assignee in every way possible in obtaining evidence and going forward with such interference.

3) The undersigned agree(s) to execute all papers and documents and perform any act which may be necessary in connection with claims or provisions of the International Convention for Protection of Industrial Property or similar agreements.

4) The undersigned agree(s) to perform all affirmative acts which may be necessary to obtain a grant of a valid United States patent to the Assignee.

5) The undersigned hereby authorize(s) and request(s) the Commissioner for Patents and the duly constituted authorities of foreign countries to issue any and all Letters Patents resulting from said application or any division or divisions or continuing or reissue applications thereof to the said Assignee, its successors and assigns, as Assignee of the entire right, title and interest, and hereby covenants that he has (they have) full right to convey the entire interest herein assigned, and that he has (they have) not executed and will not execute, any agreement in conflict herewith.


Attorney Docket No. 26WV-160509 [RALEP032]

6) *The undersigned hereby grant(s)*

**Marc A. Sockol, Reg. No. 40,823; Shaalu Mehra, Reg. No. 44,934; Daniel C. Kloke, Reg. No. 58,417; William F. Ahmann, Reg. No. 52,548; Mukund H. Sharma, Reg. No. 64,692; and all attorneys and agents associated with Customer No. 69849.**

*the power to insert on this assignment any further identification which may be necessary or desirable in order to comply with the rules of the United States Patent and Trademark Office for recordation of this document.*


Date 8/16/2011

  
\_\_\_\_\_  
Gregory G. Raleigh

Date 8-16-2011

  
\_\_\_\_\_  
Alireza Raissinia

Date 8/16/11

  
\_\_\_\_\_  
James Lavine

W02-WEST:1LKBI\403688630.1

-2-

## PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1  
Stylesheet Version v1.2

EPAS ID: PAT4210295

|   |                           |                       |
|---|---------------------------|-----------------------|
| <b>SUBMISSION TYPE:</b>                           | NEW ASSIGNMENT            |                       |
| <b>NATURE OF CONVEYANCE:</b>                      | MERGER AND CHANGE OF NAME |                       |
| <b>EFFECTIVE DATE:</b>                            | 12/29/2016                |                       |
| <b>CONVEYING PARTY DATA</b>                       |                           |                       |
|   | <b>Name</b>               | <b>Execution Date</b> |
|   | HEADWATER PARTNERS I LLC  | 12/29/2016            |
| <b>NEWLY MERGED ENTITY DATA</b>                   |                           |                       |
|   | <b>Name</b>               | <b>Execution Date</b> |
|   | HEADWATER MANAGEMENT LLC  | 12/29/2016            |
| <b>MERGED ENTITY'S NEW NAME (RECEIVING PARTY)</b> |                           |                       |
| <b>Name:</b>                                      | HEADWATER RESEARCH LLC    |                       |
| <b>Street Address:</b>                            | 1011 PRUITT PLACE         |                       |
| <b>City:</b>                                      | TYLER                     |                       |
| <b>State/Country:</b>                             | TEXAS                     |                       |
| <b>Postal Code:</b>                               | 75703                     |                       |
| <b>PROPERTY NUMBERS Total: 56</b>                 |                           |                       |
| <b>Property Type</b>                              | <b>Number</b>             |                       |
| Patent Number:                                    | 8839387                   |                       |
| Patent Number:                                    | 8839388                   |                       |
| Patent Number:                                    | 8868455                   |                       |
| Patent Number:                                    | 8886162                   |                       |
| Patent Number:                                    | 8893009                   |                       |
| Patent Number:                                    | 8897743                   |                       |
| Patent Number:                                    | 8897744                   |                       |
| Patent Number:                                    | 8898079                   |                       |
| Patent Number:                                    | 8898293                   |                       |
| Patent Number:                                    | 8903452                   |                       |
| Patent Number:                                    | 8924469                   |                       |
| Patent Number:                                    | 8924543                   |                       |
| Patent Number:                                    | 8924549                   |                       |
| Patent Number:                                    | 8948025                   |                       |
| Patent Number:                                    | 9014026                   |                       |

| Property Type  | Number  |
|----------------|---------|
| Patent Number: | 9026079 |
| Patent Number: | 9037127 |
| Patent Number: | 9094311 |
| Patent Number: | 9137701 |
| Patent Number: | 9137739 |
| Patent Number: | 9143976 |
| Patent Number: | 9154428 |
| Patent Number: | 9173104 |
| Patent Number: | 9179308 |
| Patent Number: | 9179315 |
| Patent Number: | 9179316 |
| Patent Number: | 9179359 |
| Patent Number: | 9198042 |
| Patent Number: | 9198074 |
| Patent Number: | 9198075 |
| Patent Number: | 9198076 |
| Patent Number: | 9198117 |
| Patent Number: | 9204282 |
| Patent Number: | 9204374 |
| Patent Number: | 9215159 |
| Patent Number: | 9215613 |
| Patent Number: | 9220027 |
| Patent Number: | 9225797 |
| Patent Number: | 9232403 |
| Patent Number: | 9247450 |
| Patent Number: | 9253663 |
| Patent Number: | 9258735 |
| Patent Number: | 9270559 |
| Patent Number: | 9271184 |
| Patent Number: | 9277433 |
| Patent Number: | 9277445 |
| Patent Number: | 9319913 |
| Patent Number: | 9351193 |
| Patent Number: | 9386121 |
| Patent Number: | 9386165 |
| Patent Number: | 9392462 |
| Patent Number: | 9491199 |
| Patent Number: | 9491564 |

| Property Type  | Number  |
|----------------|---------|
| Patent Number: | 9521578 |
| Patent Number: | 9532161 |
| Patent Number: | 9532261 |

**CORRESPONDENCE DATA**

**Fax Number:**

*Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent using a fax number, if provided; if that is unsuccessful, it will be sent via US Mail.*

**Phone:** 903-201-6211

**Email:** patent@headwaterllc.com

**Correspondent Name:** ANN TAYLOR

**Address Line 1:** 1011 PRUITT PLACE

**Address Line 4:** TYLER, TEXAS 75703

|                           |            |
|---------------------------|------------|
| <b>NAME OF SUBMITTER:</b> | ANN TAYLOR |
|---------------------------|------------|

|                   |              |
|-------------------|--------------|
| <b>SIGNATURE:</b> | /Ann Taylor/ |
|-------------------|--------------|

|                     |            |
|---------------------|------------|
| <b>DATE SIGNED:</b> | 01/04/2017 |
|---------------------|------------|

**Total Attachments: 3**

source=Certificate\_Merger#page1.tif

source=Certificate\_Merger#page2.tif

source=Certificate\_Merger#page3.tif



# Delaware

The First State

Page 1

I, JEFFREY W. BULLOCK, SECRETARY OF STATE OF THE STATE OF DELAWARE, DO HEREBY CERTIFY THE ATTACHED IS A TRUE AND CORRECT COPY OF THE CERTIFICATE OF MERGER, WHICH MERGES:

"HEADWATER PARTNERS I LLC", A DELAWARE LIMITED LIABILITY COMPANY,

WITH AND INTO "HEADWATER MANAGEMENT LLC" UNDER THE NAME OF "HEADWATER RESEARCH LLC", A LIMITED LIABILITY COMPANY ORGANIZED AND EXISTING UNDER THE LAWS OF THE STATE OF DELAWARE, AS RECEIVED AND FILED IN THIS OFFICE ON THE TWENTY-NINTH DAY OF DECEMBER, A.D. 2016, AT 3:02 O`CLOCK P.M.



Jeffrey W. Bullock, Secretary of State

4966025 8100M  
SR# 20167326785

You may verify this certificate online at [corp.delaware.gov/authver.shtml](http://corp.delaware.gov/authver.shtml)

Authentication: 203606635  
Date: 12-29-16

**PATENT**  
**REEL: 041248 FRAME: 0780**

State of Delaware  
Secretary of State  
Division of Corporations  
Delivered 03:02 PM 12/29/2016  
FILED 03:02 PM 12/29/2016  
SR 20167326785 - File Number 4966025

**CERTIFICATE OF MERGER**

**MERGING**

**HEADWATER PARTNERS I LLC  
A DELAWARE LIMITED LIABILITY COMPANY**

**WITH AND INTO**

**HEADWATER MANAGEMENT LLC  
A DELAWARE LIMITED LIABILITY COMPANY**

---

Pursuant to Section 18-209 of the Delaware Limited Liability Company Act

---

Headwater Management LLC, a Delaware limited liability company (the “**LLC**”), does hereby certify as follows:

**FIRST:** The LLC is a limited liability company duly formed and existing under the laws of the State of Delaware and Headwater Partners I LLC (the “**Company**”) is a limited liability company duly formed and existing under the laws of the State of Delaware.

**SECOND:** The Agreement and Plan of Merger (the “**Merger Agreement**”), dated as of December 29, 2016, by and among the Company and the LLC, setting forth the terms and conditions of the merger of the Company with and into the LLC (the “**Merger**”), has been approved, adopted, certified, executed and acknowledged by the LLC and the Company in accordance with Section 18-209 of the Delaware Limited Liability Company Act.

**THIRD:** The LLC shall be the surviving entity of the Merger (the “**Surviving LLC**”) and the name of the Surviving LLC shall be changed to “Headwater Research LLC”.

**FOURTH:** The executed Merger Agreement is on file at the principal place of business and office of the Surviving LLC at the following address: 1011 Pruitt Place, Tyler, Texas 75703.

**FIFTH:** A copy of the Merger Agreement will be furnished by the Surviving LLC, on request and without cost, to any member of the Company or the LLC.

**SIXTH:** The Merger shall be effective upon the filing of this Certificate of Merger with the Secretary of State of the State of Delaware.

\* \* \*

**IN WITNESS WHEREOF**, Headwater Management LLC has caused this Certificate of Merger to be executed by an authorized person on December 29, 2016.

**HEADWATER MANAGEMENT LLC**

By: /s/ Greg Raleigh

Name: Greg Raleigh

Title: Manager

*[Signature Page to Certificate of Merger]*